AMENDMENTS TO THE SPECIFICATION:

At page 1, line 10, before the section entitled "BACKGROUND," please insert the following paragraph:

<u>CROSS-REFERENCE TO RELATED APPLICATIONS</u>

This application is a continuation of U.S. Application No. 08/973,195, filed March 6, 2000, now U.S. Patent No. ____________________. This application is also the National Stage of International Application No. PCT/US96/09474 filed June 3, 1996, which claims priority from U.S. Application No. 08/645,348 filed May 13, 1996, U.S. Application No. 08/544,815 filed October 18, 1995, U.S. Application No. 08/513,658 filed August 11, 1995, and U.S. Application No. 08/457,697 filed June, 1995.

Kindly delete the present second full paragraph on page 28, lines 8-15 and substitute the following paragraph:

In the embodiment illustrated in FIG. 1A, various modes of operation are dynamically controlled by the wireless access devices 2A-C. Such control involves the consideration by each wireless access device of many factors such as: 1) received signal strength; 2) success / fail rates; 3) mode capabilities of participating devices; [3] <u>4</u>) neighboring access device operation and performance; [4] <u>5</u>) application support required; and [5] <u>6</u>) power concerns. In addition to modifying the parameters of a particular mode (as previously mentioned), the wireless access devices may also select from a plurality of modes (as described in more detail below in reference to FIG. 10).

Kindly delete the paragraph at page 1, line 26 to page 2, line 3 with the following paragraph:

Communication devices within a wireless local area network employ wireless communication links to transfer data and commands within the local area network. Typical units within a wireless local area network include stationary wireless access devices, mobile radio units, mobile image capture units, printing units, and other units operative with the data and commands. These units often link to a wired local area network through a wireless access device to transfer data and commands to devices located on the wired network. The wireless local area networks typically employ cellular communication techniques to provide the wireless communication links within the local ~~are~~area network.

Kindly delete the paragraph at page 31, lines 9-23 with the following paragraph:

The control circuitry 503 causes the selection of operating parameters and modes as described previously and in reference to FIG. 1B. Specifically, the control circuitry 503 sets the configuration of the modulator 505, demodulator 507 and oscillator 509. For example, to operate in a direct sequence spread spectrum mode, the control circuitry 503: 1) sets the base frequency of the oscillator 509; 2) sets related mode parameters such as the chipping rate; and 3) delivers enable signals and a spreading code to a spreader circuit ~~515~~516 and despreader circuit 517 of the modulator 505 and demodulator 507, respectively. To operate in a frequency hopping mode, the control circuitry 503: 1) establishes related parameter settings; 2) disables the spreading and despreading circuits ~~515~~516 and 517; 3) selects a hopping sequence of frequencies; and 4) directs the oscillator 509 through the sequence. To operate in a hybrid, direct sequence, frequency hopping mode, the control circuitry ~~515~~503: 1) establishes related parameter settings; 2) delivers enable signals and a spreading code to a spreader

circuit ~~515~~516 and despreader circuit 517; 3) selects a hopping sequence of frequencies; and 4) directs the oscillator 509 through the sequence. Similarly, the control circuitry 503 may select any modes, e.g., the modes identified in reference to FIG. 10 below, and set all parameters related thereto.

Please replace paragraph at page 32, lines 1-13 with the following paragraph:

FIG. 1D is a block diagram illustrating the operation of the wireless access device having the multi-mode transceiver of FIG. 1C installed therein. In particular, a transceiver module 501 (as described in relation to FIG. 1C) is installed within a wireless access device ~~503~~523. The wireless access device ~~503~~523 contains control circuitry ~~505~~525 and interface circuitry ~~507~~527 for communicating with a wired network ~~509~~529. In addition to providing typical access device service, the control circuitry ~~505~~525 of the wireless access device ~~503~~523 manages all mode and parameter changes for the transceiver module 501. The control circuitry ~~505~~525 monitors, among other factors, the historical performance characteristics of each mode, neighboring access device modes, parameters and performance and current mode performance (via received signal strength indications and success/failure rates). The control circuitry ~~505~~525 also maintains and updates the mode table, attachment and detachment of participants, as described above in reference to FIG. 1B for example. The control circuitry ~~505~~525 performs such functionality via control signals delivered to the control circuitry of the transceiver module ~~503~~501.

Please replace the paragraph at page 32, line 14 to page 33, line 4, with the following paragraph:

When installed in a portable/mobile or stationary transceiver unit (e.g., peripheral device, code reader, hand-held terminal, etc.), a transceiver module responds to communication control through commands received from the wireless access device while attempting to attach. Such commands direct the mode and parameters of operation of the transceiver module in the transceiver unit. In addition, the control circuitry of the transceiver module 501 directs entry of a default mode and default parameters prior to receiving direction from a wireless access device. Although the transceiver module 501 may receive additional mode and parameter commands from the host controller within the transceiver unit, [in]it need not do so. Such local control by a transceiver unit, however, may prove advantageous in other wireless network embodiments or in specific applications. For example, other network embodiments might involve only two transceiver units without a wireless access device. As such, the transceiver units may negotiate a mode and related parameters amongst themselves, controlling such changes via host processors within the transceiver units. Negotiation of mode and parameter changes might also involve channel condition monitoring or other factors currently assigned to the wireless access device.

Kindly delete the present first full paragraph on page 41, lines 3-12, and substitute the following paragraph:

The radio frequency (RF) transceiver 298 of the present invention comprises a receiver 114 and a transmitter 118. The transmitter 118 preferably comprises a data formatter and spreader ("BASE BAND FORMATTER/SPREADER") 124, a selectable transversal filter 150 comprising programmable transversal filters ("PROGRAMMABLE TRANSVERSAL FILTER") 146 and 148 (See FIG. 11), a binary phase shift keying

(BPSK) modulator ("BPSK MODULATOR") 130, and a transmitter up converter and linear transmit power amplifier ("TX UP CONVERTER & AMP") 314. The receiver 114 preferably comprises a receiver down [converter304] converter 304, a selectable bandwidth intermediate frequency (IF) stage ("~~SELECTIBLE~~ SELECTABLE BW IF") at a fixed IF center frequency, a non coherent I/Q base band converter ("BASEBAND CONVERTER"), and a demodulator/despreader ("DEMOD. DESPREAD.").

Kindly delete the paragraph on page 41, lines 13-19, and substitute the following paragraph:

A common radio frequency bandpass filter ("BPF") 399 is shared by both the transmitter 114 and the receiver 118. The transceiver 298 is coupled to an antenna 112 through an antenna switch circuit 302. A frequency generator 116 is common to both the receiver 114 and the transmitter 118, producing a frequency agile main VCO output ("MAIN VCO") ~~332~~196, and an auxiliary output ("AUX VCO") 334 at twice the IF frequency. A divide by 2 circuit (316 and 318) in the transmit path of the auxiliary VCO signal 334 is activated when the transceiver 298 is switched to the transmit mode.

Kindly delete the last paragraph beginning at line 22 on page 42 and ending on line 8 of page 43 and substitute the following paragraph:

In the direct sequence (DS) modes, the data is mapped into I/Q symbols for either BPSK or QPSK modulation. The ASIC generates a synchronous chip clock at a multiple of the symbol rate that is applied to the pseudo-random number (PN) generator of FIG. 14A to produce a chipping sequence at the selected spreading ratio. The exact chipping sequence is selected by programming the feedback select of FIG. 14A. The chipping sequence is multiplied with the I/Q data symbols by use of exclusive OR gates.

The selected data rate and spreading ratio determine the main lobe bandwidth of the transmitted signal. The bandwidth of the main lobe and side lobes are reduced by applying the transversal filters (146 and 148 of FIG. [148] 14B), which comprise circuitry of the transversal filter 150 of FIG. 10 with the shift registers operating at the chipping rate rather than the symbol rate. The main lobe bandwidth is limited to approximately 1.6 times the chip clock frequency.

Kindly delete the first full paragraph on page 43, lines 9-14, and substitute the following paragraph :

The remainder of the Transmitter 118 is a standard I/Q modem. The I/Q waveforms are applied to a quadrature PSK modulator operating at 1/2 the Auxiliary VCO frequency. The modulated signal is filtered to reduce harmonic content, then undergoes a second conversion with the Main VCO output [332] 196 to produce a final output frequency. This signal is filtered to reduce the image of the mix product from this second conversion, and then amplified by the antenna 112 through the antenna switch 302 and RF bandpass filter 300.

Kindly delete the second full paragraph on page 43, lines 15-21, and substitute the following paragraph:

In the receive mode, the receiver circuitry [118] 114 is switched on and the transmitter circuitry switched off through the control interface. Incoming signals present at the antenna are amplified and converted to the IF frequency by mixing with the main VCO output [332] 196. The output of the receiver down converter 304 is applied to the selectable bandwidth IF filter 322, which is programmed to the correct bandwidth for the

selected mode of operation by the MAC µP 128. The filters 174, 176 and 178 provide rejection of out of band signals for the selected signal bandwidth.

Kindly delete the first full paragraph on page 53, lines 3-12, and substitute the following paragraph :

FIG. 15 is a block diagram illustrating the frequency generator circuitry 116 of FIG. 10. The frequency generators 116 are preferably located on the radio card CCA 44 of FIGS. 7, 8 and 9. The radio interface card 58 of FIGS. 7, 8 and 9 may provide data signals ("DATA", "CLOCK", "STROBE" and "LOCK DET") 190 and a clock signal ("CLOCK") 192 [2hich] which is preferably a 30 MHz clock to the fractional number frequency agile synthesizer ("FRACTIONAL N SYNTHESIZER") 194. The 30 MHz clock signal may be divided to produce frequencies of which 30 MHz is a multiple. The synthesizer 194 may also receive frequency input signals from a main voltage-control oscillator (MAIN VCO) 196 and from an auxiliary-voltage controlled oscillator (AUXILLARY VCO) 198. The synthesizer 194 preferably switches between transmission and receiving modes in 200 :s or less.

Kindly delete the paragraph on page 54, line 23 to page 55, line 3 and substitute the following paragraph:

FIG. 18 is a block diagram of the MAC circuitry 128 of FIG. 10. The MAC circuitry 128 is preferably located on the radio interface card 58 of FIGS. 7, 8 and 9. The medium access control circuitry 128 may be utilized in the protocol of communications media used in a particular communications network. The media access circuitry 128 may also utilize the 2.4 GHz MAC protocols to provide operation on both ~~9000~~900 MHz and 2.4 GHz networks.

Kindly delete the last paragraph beginning at line 21 of page 63 and ending on line 4 of page 64 and substitute the following paragraph:

The wireless access device 1701 selects (and may periodically reselect) one of a plurality of communication modes and associated parameters of operation based on a variety of factors mentioned previously such as recent success rate, RSSI, neighboring cell operation, etc. However, when the wireless terminal [1723] 1703 roams within range of the wireless access device 1701, the roaming terminal must identify the currently selected mode and associated parameters being used by the wireless access device 1701 to maintain the cell's communication. Although the wireless terminal 1703 could be configured to scan each available mode to identify the currently selected mode and parameters, such efforts often prove time consuming.

AMENDMENTS TO THE DRAWINGS:

Kindly substitute the enclosed revised Figures 1C, 1D, 10 and 16 for the original figures. Copies of the Figures 1C, 1D and 10 showing changes also are enclosed.

Regarding Figure 16, 118 was substituted for 113.